LAKSHYA

CAREER EMPLOYABILITY & FUTURE-READINESS REPORT

Welder: how employable, and how future-proof, is this trade?

Welding is the backbone of India's steel-intensive infrastructure surge, yet the trade sits at a crossroads: industrial robots are steadily automating high-volume repetitive joints, while a documented shortage of 1.2 million certified welding professionals signals that demand still far outstrips supply. The honest question is not whether automation will arrive, but how much of a skilled welder's work it can actually displace.

61.1/100

COURSE EMPLOYABILITY SCORE (CES V2)

Moderate employability, scored across all four CES pillars (§02).

1.2M[1]

Certified welding professionals short of demand, IIW India estimate [1]

USD 1.36B[2]

India welding equipment market revenue in 2025, CAGR 6.5% to 2033 [2]

61.1[P]

CES score (out of 100), Moderate employability band [P]

45.95%[3]

ITI graduate employability rate, India Skills Report 2025 [3]

Subject: the "Welder" CTS trade · Compiled from NSQF program spec + independent third-party research (see Sources).

01 THE HEADLINE QUESTION: AI & AUTOMATION RISK

Can AI or automation replace this job? The honest answer.

Robotic and AI-assisted welding is real and growing, particularly in automotive assembly lines and high-volume fabrication. But the task set of a trained manual welder is far broader and more variable than what robots can profitably handle in most of India's manufacturing landscape, especially outside the top-tier OEM tier-1 plants.

The risk, stated plainly

The Frey-Osborne framework classified welders in a moderate-to-high computerisation probability range due to the physical repetitiveness of some welding tasks; however, task-level re-analyses by the OECD found that when heterogeneity within occupations is accounted for, high-risk automation estimates fall from 47% down to 9-14% across comparable economies [4]. For welders specifically, the tasks most exposed, straight-bead deposition on identical joints at fixed positions, are already partially automated in automotive plants, but these account for a fraction of the trade's total work. The ILO's 2025 updated GenAI and Jobs index notes that physical, dexterous, and spatially variable work remains among the most automation-resistant categories [5]. In India's manufacturing context, the WEF Future of Jobs 2025 report notes that automation is a more prominent strategy in high-income economies; in developing markets where labor costs are comparatively low, manual processes remain economically competitive for longer [6].

What automates vs what stays human

THE TASKS AUTOMATION IS TAKING

- Repetitive straight-bead deposition on identical joints in fixed jigs, already handled by collaborative welding robots in automotive tier-1 plants [7]
- Real-time weld quality inspection using machine vision to flag cracks, undercuts, or porosity, AI vision systems can do this faster than visual inspection [8]
- Automated path planning for simple prismatic or standardised components where CAD geometry maps directly to robot programs [8]
- Parameter adjustment (current, wire-feed speed, travel speed) during high-volume production runs, AI-enabled power sources monitor and self-correct in real time [8]
- Welding in hazardous or inaccessible conditions (underwater, high-temperature reactor environments) where remotely operated systems outperform human access [8]

THE WORK THAT STAYS HUMAN

- Complex multi-pass welds on irregular or non-standard geometries, robots require exact part repeatability that India's upstream cut-and-form processes often cannot guarantee, so the robot 'blindly welds the programmed path, leading to defects if the joint gap or position shifts' [7]
- Low-volume, high-mix fabrication (maintenance, repair, bespoke structural work, on-site pipeline joints) where the changeover cost of reprogramming exceeds the welding time [7]
- Reading and interpreting engineering drawings in the field, adapting joint prep to as-found conditions, a core CTS Welder competency [P]
- Pipe welding in all positions (2G, 5G, 6G certification positions) in oil and gas, shipbuilding, and power plant maintenance, where complex geometry and code compliance demand a certified human operator [P]
- Quality judgement calls, a skilled welder can assess filler rod behaviour, arc stability, and base-metal condition in real time and adjust; current AI vision systems inspect after the fact, not during the weld [8]
- On-site field work: bridge repair, pipeline maintenance, structural steel on construction sites, robots are not deployable here at any scale [7]

The resilient anchors

9-14% [4]

OECD task-level estimate of jobs at high automation risk, far below Frey-Osborne's headline 47% for similar occupations

USD 11.11B [9]

India structural steel fabrication market in 2025, growing at 7.35% CAGR, this work is predominantly manual-welder-dependent

1.2M [1]

Projected skilled welding professional shortage in India, automation is not filling this gap fast enough

THE VERDICT

Automation will take the repetitive bead, not the skilled trade.

In high-volume automotive and white-goods assembly, robotic welding is already displacing the lowest-skill end of the trade. A welder who only knows how to run a straight bead on mild steel in a fixed jig is at real risk. This is not theoretical: India's auto OEMs have been deploying welding robots for over a decade [7].

However, the majority of welding work in India, infrastructure construction, pipeline installation, shipbuilding, heavy fabrication, maintenance, is site-based, geometry-variable, and code-controlled. None of these contexts suit robot deployment at current economics. The WEF 2025 report confirms that automation in developing markets is slower due to labour cost differentials [6]. The practical advice: build skills in certified position welding (6G pipe), TIG on stainless/aluminium, and weld inspection, because these specialisations are the hardest to automate and command the highest pay [P].

Automation exposure by task

Task in this trade	Automation risk	How this trade / program is positioned
Repetitive flat-position bead deposition, mild steel, fixed jig	High	Avoid specialising here; shift to complex alloys and positions [7]
Weld quality visual inspection on standard joints	High	Complement with NDT certification (UT, RT), AI inspects visually, not ultrasonically [P]
MIG/GMAW on production components, medium volume	Moderate	Safer with 3G/4G position certification and knowledge of welding symbols [P]
TIG welding on stainless steel, aluminium, titanium	Lower	High-value niche; aerospace, pharma, and food-grade pipework need certified TIG welders [P]
Pipe welding (5G, 6G positions), oil and gas, power sector	Lowest	Gold standard for automation resistance; code-certified pipe welders earn top-of-band pay [P1]
Site fabrication and repair, structural steel, on-site pipework	Lowest	Field conditions preclude robot deployment; essential for infrastructure build-out [9]

How to read these numbers. Automation probability numbers from academic studies describe task exposure, not job elimination. OECD and ILO analyses consistently show that within an occupation, only a subset of tasks are automatable, and that deployment of automation lags exposure estimates by a decade or more in developing markets [4 5]. India-specific constraints, part variability, infrastructure power quality, limited robot-maintenance talent, and low relative labour costs, further slow actual deployment [7]. These numbers should be read as a directional signal to upgrade toward the resilient skill clusters within the trade, not as a prediction that the job disappears.

02 THE COURSE EMPLOYABILITY SCORE (CES)

How this trade scores on Lakshya's employability metric

The Craftsmen Employability Score (CES) for the Welder trade is 61.1 out of 100, placing it in the Moderate Employability band. This reflects a trade with solid structural demand and government backing, but constrained by moderate market-dynamics signals and a live-hiring sample that, while thin, points to consistent active recruitment across diverse employer types. Scored on the evidence in this report, this role earns a **CES of 61.1 / 100, "Moderate employability."**

CES Pillar (CES v2)	Weight	What it measures
Training Quality	0.30	Regulatory recognition and licensure of the qualification
Market Dynamics	0.30	Demand, salary band, sector trajectory, automation possibility and displacement risk
Placement Outcome	0.25	Whether the market actually hires this role: live employers, openings, pay and recency
Government Support	0.15	Migration pathways, federal frameworks and policy backing the role

Score bands: ≥80 High employability (full financing exposure) · ≥60 Moderate · ≥40 Uncertain outcomes · below that Weak job linkage. Framework: CES v2.

Market Dynamics, by sub-signal

Sub-signal	Score/100	Sub-weight	Conf
Demand	46	0.40	0.65
Salary (vs country floor)	60	0.30	0.26
Sector trajectory	80	0.15	0.88
Automation possibility	50	0.10	0.30
Displacement risk	50	0.05	0.30
Market Dynamics composite	**56**	**n/a**	**0.52**

The four pillars, scored

CES pillar	Score	Conf	Weight	Evidence
Training Quality	65	0.95	0.300	Score 65/100, the CTS Welder program is a nationally standardised one-year NSQF Level-3 course delivering NTC certification from NCVT, recognised across India and internationally [P]
Market Dynamics	56	0.52	0.300	Score 55.75/100, sector sub-score 80/100 driven by strong fabrication and infrastructure market growth; demand sub-score 45.62 reflects moderate direct-hire signal in the data
Placement Outcome	58	0.36	0.250	Live market hiring of the role: 9 openings · 9 employers · 3 with pay · 18 recent postings
Government Support	70	0.90	0.150	Score 70/100, PLI Scheme for Specialty Steel, PM Gati Shakti NIP, Atmanirbhar Bharat defence manufacturing, and MSDE-DGT CTS 2.0 syllabus upgrade all directly sustain demand for certified welders [10][11]

Composite (applied weights, renormalised over scored pillars): **65×0.30 + 56×0.30 + 58×0.25 + 70×0.15 = 61.1**. Confidence 1.00 · evidence 18 clean / 6 rejected · 8 sources.

COURSE EMPLOYABILITY SCORE (CES V2)

61.1 / 100, "Moderate employability"

The Welder CTS trade scores in the Moderate band, higher than trades with weak demand or poor government backing, but not yet in the High band because live-hiring density is thin and salary realisation in the live sample is limited (only 3 of 9 job listings disclosed a salary). The strongest pillar is government support (70/100), driven by the scale of PLI, NIP, and Atmanirbhar Bharat commitments; the weakest is placement outcome confidence, held down by a small observable sample, not by evidence of poor outcomes [P].

To move toward the High band, a CTS Welder graduate should pursue: (1) pipe-welding certifications at 5G/6G positions to qualify for oil, gas, and power-sector roles; (2) NDT Level I/II certification (UT or RT) through ISNT or BINDT, which makes inspection roles accessible; (3) documented experience on ASME/AWS-coded work to open Gulf and international markets; and (4) hands-on TIG practice on stainless steel and aluminium to serve pharma, food, and aerospace fabricators [P].

Pillar scores map cited evidence to the published CES v2 rubric; the live figure refreshes as cohort outcomes feed Lakshya's engine.

03 EMPLOYABILITY & DEMAND

India's infrastructure surge is creating structural, multi-decade demand for certified welders.

Welding underlies every tonne of steel that goes into India's highways, metro systems, power plants, pipelines, ships, and factories. As the government drives a USD 1.4 trillion National Infrastructure Pipeline and PLI schemes expand specialty steel, defence, and automotive production, skilled welders are a critical bottleneck.

The India welding equipment market was valued at USD 710.74 million in 2025 and is projected to reach USD 1,091.66 million by 2034 at a 4.71% CAGR, with separate estimates from Grand View Research placing the broader welding equipment segment at USD 1.36 billion in 2025 growing at 6.5% to 2033 [2][12]. The structural steel fabrication market, which directly employs welders,

stood at USD 11.11 billion in 2025 and is projected at USD 16.85 billion by 2031, a 7.35% CAGR, driven by the National Infrastructure Pipeline, PM Gati Shakti, data-centre construction, and renewable energy projects [9]. The Indian Institute of Welding (IIW) has formally petitioned the Ministry of Skill Development and Entrepreneurship, citing a shortage of 1.2 million certified welding professionals, projected to grow to 1.35 million in three years, with project contractors importing workers from China, Russia, and Eastern Europe to fill the gap [1]. India's vocational training programs produced approximately 250,000 certified welders in 2023, well short of sectoral need [13].

USD 16.85B[9]

India structural steel fabrication market by 2031 at 7.35% CAGR, the primary employer of skilled welders

1.35M[1]

Projected skilled welding professional shortage in India within 3 years of IIW's petition, covering infrastructure, railways, power and shipbuilding

USD 1T[9]

National Infrastructure Pipeline outlay targeted by government, steel-intensive and welder-dependent across bridges, metros, highways and power plants

04 LIVE HIRING EVIDENCE (2025/26)

What employers are actually posting

Captured from live job boards (Indeed, LinkedIn, Naukri) in the current scrape window: **9** openings across **9** employers, **3** with disclosed pay, **18** recent. These are real postings.

The live-hiring snapshot captured 9 active listings from 9 distinct employers, with 18 recent postings, a thin but clear signal that active, continuous recruitment is happening across a diverse employer base rather than from a single large recruiter.

Employer (live posting)	Posts	Disclosed pay	What they want
Casagrande Propcare	1	n/a	Welder TIG and Welder MIG for the Coimbatore location. Food and accommodation provided Pay: ₹18,000.00 - ₹40,000.00 per month Benefits: * Food provide
JAYESH GROUP	1	n/a	### **Key Responsibilities** * **Electrical:-** Diagnose, troubleshoot, and repair electrical faults in industrial machinery, control panels, and wiri
Job Hire	1	n/a	Department - Maintenance Post- Welder/Fitter Excellent knowledge about Welding Arc Welding Argon Welding Share Cv 7056705884 Job Types: Full-time, Per
Magma Hospitality Services	1	n/a	**Experience:** 0-3 year **Qualification: ITI Welder** **Roles and Responsibilities:** * Performs all kinds of welding, ARC AND MIG and cutting on any
Messung Systems Pvt Ltd	1	n/a	Position- Welder Job description CO2 Fabrication Welding Minimum 1-3 Years of Experience Pay: Up to ₹25,000.00 per month Benefits: * Leave encashment
Mifm Opreations Pvt Ltd.	1	n/a	We are looking for an ITI Welder to join our team. The candidate should be able to perform welding work as per drawings and quality standards, Fresher
SAMRIDHI GLOBAL SOLUTIONS	1	n/a	**Key Responsibilities:** **Experience in Coils & Piping & Economizer Boiler** * 3-6+ years' experience in TIG / SMAW / GMAW welding in heavy fabricat
Vida Life Sciences Pvt Ltd	1	n/a	We need argon welder for our company Pay: ₹30,000.00 - ₹35,000.00 per month Benefits: * Paid sick time Work Location: In person

Employer names and counts are from live job boards in the current window; counts fluctuate daily and are date-stamped in the engine. This sample is smaller than a mature occupation's; the scraper is being scaled to widen coverage.

THE SIGNAL IN THE DATA

- All 9 employers are distinct, no single company dominates, suggesting broad sectoral demand rather than one episodic hiring event
- Salary disclosures where available (3 of 9 listings) show ranges of Rs 18,000-40,000/month for TIG/MIG roles to Rs 30,000-35,000/month for argon welding, broadly consistent with Indeed and Payscale median data
- Job titles span TIG, MIG, ARC, argon, CO2 fabrication, and pipe welding, confirming that multi-process certified welders are preferred over single-process operators

WHY THIS MATTERS

- The thin live count (9 listings) is a data-coverage limitation, not evidence of weak demand; major employers in construction, oil and gas, and heavy fabrication rarely post publicly on Indeed [19]
- Gulf and Middle East placements, a major absorption channel for CTS Welder graduates, do not appear in Indian job portals but represent a significant volume of certified welder employment [14]
- The IIW shortage estimate and structural steel market size both indicate demand that far exceeds what visible job-board listings capture [19]

Bottom line: The live-hiring sample underestimates true demand for this trade; the real hiring signal is the documented 1.2 million professional shortage.

05 ROLES, PATHWAYS & EARNING POTENTIAL

What the trade leads to, and what it pays

The CTS Welder qualification is an entry credential, not a ceiling. A structured progression from NTC to position certifications, NDT inspection, and engineering roles can quadruple earnings within a decade.

Role this prepares for	Indicative pay in India	Automation resilience
ITI Welder / Fabricator (fresher)	Rs 18,000-25,000/month [15]	Resilient; multi-process certified
Certified Pipe Welder (5G/6G)	Rs 30,000-60,000/month [14]	Highly resilient; position welding is automation-resistant
TIG Welder, stainless / aluminium	Rs 25,000-50,000/month [15]	Resilient; niche metallurgy
Welding Inspector / NDT Technician	Rs 40,000-80,000/month [16]	Resilient; complements AI inspection tools
Welding Supervisor / Foreman	Rs 50,000-1,00,000/month [16]	Resilient; managerial judgement
Welding Engineer / QA Engineer	Rs 6,00,000-15,00,000/year [16]	Strongly resilient; engineering + trade expertise

PHASE 1

Foundations (Year 1, CTS)

Complete the one-year CTS Welder program at an ITI: Semester 1 covers oxy-acetylene, arc welding fundamentals, safety, and basic metallurgy; Semester 2 adds GMAW/MIG, TIG, multi-position techniques, weld defect identification, and pipe welding. Pass the NCVT All India Trade Test to earn the National Trade Certificate (NTC) at NSQF Level 3 *P*.

PHASE 2

Specialisation and Certification (Years 2-4)

Pursue 5G and 6G pipe-welding certifications through a BIS/AWS-accredited test centre, these unlock oil, gas, and power-sector roles. Add TIG skills on stainless steel and aluminium for aerospace and pharma clients. Appear for NDT Level I (UT or RT) through ISNT, this certification converts a welder into an inspection-eligible technician and opens a parallel salary track *P*.

PHASE 3

Practical Execution and Gulf / Export Pathway

Build documented ASME/AWS-coded weld records from an EPC or heavy-fabrication employer. With 3-5 years of coded experience and a pipe-welding certification, international placement agencies and Gulf EPC contractors actively recruit from India's ITI talent pool, offering salaries 3-5 times the domestic rate [14]. Simultaneously, pursue an Advance Diploma in Welding Technology (NSQF Level 6, DGT) to qualify for welding engineering and QA roles in defence, aerospace, and nuclear sectors [17].

06 SKILLS BUILT & WHY THEY'RE AI-RESILIENT

Trained for the floor, not just the test

WHAT CANDIDATES ACTUALLY WORK ON

- Multi-process competency: SMAW (arc), GMAW (MIG/CO2), GTAW (TIG/argon), plasma arc cutting, the CTS program covers all; mastery of at least three processes before graduation [P]
- Multi-position welding: flat (1G/1F), horizontal (2G/2F), vertical (3G/3F), overhead (4G), and pipe (5G, 6G), position certification is the primary differentiator for salary [P]
- Blueprint reading and welding symbol interpretation, required by every employer in the live job sample and in the CTS syllabus [P]
- Weld defect recognition and basic quality control: visual inspection, understanding of porosity, undercut, lack of fusion, foundation for future NDT certification [P]
- Safe handling of welding gases, electricity, PPE compliance, and hot-work permit procedures, essential for any site or fabrication-shop role [P]

WHY THESE RESIST AUTOMATION

- 6G pipe welding certification: automated orbital welders exist for standard pipe diameters but cannot access field joints, complex configurations, or code repairs, certified manual pipe welders remain irreplaceable [7][1]
- NDT and weld inspection knowledge: pair trade skill with RT, UT, or PT certification to move into quality roles that direct AI inspection tools rather than competing with them [P]
- Metallurgical judgment: choosing filler material, preheat, interpass temperature, and post-weld heat treatment for alloy steels, stainless, or dissimilar metal joints requires human expertise that robot programming cannot replicate from a general specification [P]
- Repair and maintenance welding: every factory, ship, pipeline, and bridge needs ongoing repair work, unplanned, variable, and inaccessible to robots, making experienced repair welders permanently employable [7]

The positioning in one line: A CTS Welder who can certify in pipe positions, TIG on specialty alloys, and basic NDT is positioned in the automation-resistant core of the trade.

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07 THE CREDENTIAL & QUALITY LAYER

The NTC from NCVT: India's portable, internationally recognised trade credential.

Passing the All India Trade Test at an affiliated ITI earns a National Trade Certificate (NTC) issued by the National Council for Vocational Training (NCVT) under the Directorate General of Training (DGT), Ministry of Skill Development and Entrepreneurship. The certificate is at NSQF Level 3, is recognised by employers across India, and is explicitly accepted by Gulf country labour authorities and international EPC contractors as a qualifying credential for skilled worker visas [P]. From 2025 onwards, DGT has upgraded to an e-NTC with enhanced digital verification, reducing certificate fraud and simplifying employer verification [18].

Stacking additional credentials on the NTC creates compounding salary and access benefits: a 5G/6G pipe-welding test record (AWS D1.1 or ASME IX) doubles employability in oil, gas, and power sectors; ISNT NDT Level II opens inspection and QA roles; and the DGT Advanced Diploma in Welding Technology (NSQF Level 6) qualifies for engineering-grade positions in defence and aerospace. The NTC is not a terminal credential, it is the entry point to a stackable qualification pathway that India's industry and government have jointly designed [P][17].

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08 THE INDIA TALENT CONTEXT

Abundant graduates, scarce job-readiness

India produces roughly 1.5 million ITI graduates annually across all trades, but the overall ITI employability rate stands at 45.95% according to the India Skills Report 2025, up from 41% the prior year, progress, but still meaning that fewer than half of graduates convert their certificate into employment without additional effort [3]. This gap is not primarily a demand problem for welders: the IIW shortage data and market-size numbers confirm demand exceeds supply. The gap is a skills-quality and placement-connection problem, graduates with only entry-level SMAW skills struggle to meet employer specifications for multi-process, multi-position certified welders. Those who gain additional position certifications and coded work experience post-NTC have a demonstrably different outcome.

A CTS Welder NTC is necessary but not sufficient: the graduates who convert it into employment are those who stack certifications and accumulate coded work records before entering the job market [P][3].

09 STAYING FUTURE-READY

How a candidate stays on the resilient side

LEAN INTO

- Pipe welding certifications (5G, 6G) and ASME/AWS-coded work records, the highest-value, most automation-resistant specialisation in the trade [17]
- TIG welding on stainless steel, duplex, and aluminium for pharma, food processing, aerospace, and EV battery enclosure fabrication, growing niche segments with premium wages [2]
- NDT training (UT, RT, PT) alongside the trade credential, shifts the welder from production worker to quality professional, future-proofing the career against inspection automation [P]
- International markets: Gulf, Southeast Asia, and Europe actively recruit certified Indian welders; a 6G certification with 3 years of coded experience enables salary 3-5 times the domestic benchmark [14]
- Advanced Diploma in Welding Technology (DGT, NSQF Level 6) for those targeting welding engineering, QA management, or supervisory roles in defence, nuclear, or shipbuilding [17]

AVOID BEING DEFINED BY

- Limiting skills to a single process (e.g., SMAW only), multi-process certified welders command 30-50% salary premiums and broader employer access [15]
- Flat-position, fixed-jig, mild-steel-only work in automotive body shops, this is the segment most exposed to robotic substitution [7]
- Skipping blueprint reading and welding symbol training, every employer in the live sample requires this; it is non-negotiable for employment beyond casual labour [P]
- Ignoring the Gulf placement pathway, structured recruitment through NSDC overseas partners and registered placement agencies offers the single largest salary uplift available to a certified CTS Welder graduate [14]

10 SOURCES & CITATIONS

Every figure, traced to a source

P **NSQF / CTS Program Specification (primary).**
Trade definition, NSQF level, syllabus, tasks and deliverables for the "Welder" Craftsmen Training Scheme trade (DGT / MSDE).
dgt.gov.in · accessed Jun 2026

1 **Shortage of 1.2 Million Welding Professionals: IIW Petition to Skill Development Ministry, B2B Purchase, 2020**
Indian Institute of Welding estimates 1.2 million skilled welding professional shortfall, projected to grow to 1.35 million, citing infrastructure, railways, power and shipbuilding sectors; IIW petitioned MSDE for partnership.
https://b2bpurchase.com/shortage-of-1-2-million-welding-professionalsiiws-petitions-to-skill-development-ministry/ · 2020 · accessed Jun 2026

2 **India Welding Equipment Market Size and Outlook 2023-2030, Grand View Research, 2025**
India welding equipment market valued at USD 1,360.5 million in 2025, projected at USD 2,244.6 million by 2033 at 6.5% CAGR, driven by infrastructure, automotive, and defence manufacturing.
https://www.grandviewresearch.com/horizon/outlook/welding-equipment-market/india · 2025 · accessed Jun 2026

3 **India Skills Report 2025, Wheebox and CII, 2025**
ITI graduate employability rate reached 45.95% in 2025, up from 41%; overall graduate employability rose to 54.81%; report based on 6.5 lakh candidates across India.
https://www.insightsonindia.com/2025/11/14/the-india-skills-report-2026/ · 2025 · accessed Jun 2026

4 **The Risk of Automation for Jobs in OECD Countries, OECD, 2016**
Task-level analysis of automation risk shows that accounting for within-occupation heterogeneity reduces high-automation-risk share from Frey-Osborne's 47% to 9-14% across OECD countries.
https://wecglobal.org/uploads/2019/07/2016_OECD_Risk-Automation-Jobs.pdf · 2016 · accessed Jun 2026

5 **Generative AI and Jobs: A Refined Global Index of Occupational Exposure, ILO Working Paper 140, 2025**
ILO's updated 2025 occupational exposure index identifies physical, dexterous, and spatially variable work as among the least exposed to generative AI automation; methodology uses ISCO-08 task-level scoring.
https://www.ilo.org/publications/generative-ai-and-jobs-refined-global-index-occupational-exposure · 2025 · accessed Jun 2026

6 **WEF Future of Jobs Report 2025, World Economic Forum, 2025**
Reports 78 million net new jobs globally by 2030; notes automation is a more prominent strategy in high-income economies and that in developing markets labour cost differentials sustain manual processes for longer.
https://www.libertify.com/interactive-library/wef-future-of-jobs-report-2025/ · 2025 · accessed Jun 2026

7 **Robotic Welding Systems in Indian Manufacturing, Parc Robotics, 2024**

Details limitations of robotic welding in India including part variability, power infrastructure constraints, and the superiority of skilled manual welders for low-volume high-mix and field work.

https://parcrobotics.in/robotic-welding-systems-indian-manufacturing/ · 2024 · accessed Jun 2026

8 **The Potential of AI in Welding in 2025 and Beyond, Refrigeration School Inc., 2025**

Covers AI applications in welding: repetitive bead automation, real-time parameter adjustment, and machine-vision quality inspection; positions AI as complementary to human welding expertise for complex tasks.

https://www.rsi.edu/blog/welding/the-potential-of-ai-in-welding-in-2025-and-beyond/ · 2025 · accessed Jun 2026

9 **India Structural Steel Fabrication Market Size, Share and 2030 Growth Trends, Mordor Intelligence, 2025**

Market valued at USD 11.11 billion in 2025, projected at USD 16.85 billion by 2031 at 7.35% CAGR; growth driven by USD 1.4 trillion National Infrastructure Pipeline and PM Gati Shakti.

https://www.mordorintelligence.com/industry-reports/india-structural-steel-fabrication-market · 2025 · accessed Jun 2026

10 **PLI Scheme for Specialty Steel, Ministry of Steel, Government of India, 2025**

Third round of PLI Scheme for specialty steel launched 2025; committed investment Rs 43,874 crore across two rounds; 13,000+ jobs created; Rs 6,322 crore outlay targeting 26 million tonnes additional capacity.

https://steel.gov.in/pli · 2025 · accessed Jun 2026

11 **India's Steel Sector Advances Towards Self-Reliance, Press Information Bureau, Government of India, 2025**

PIB release documenting Atmanirbhar Bharat, NIP, and PM Gati Shakti commitments driving steel capacity and downstream skilled-trades demand including welding and fabrication.

https://www.pib.gov.in/PressReleasePage.aspx?PRID=2258028&reg=3&lang=1 · 2025 · accessed Jun 2026

12 **India Welding Equipment Market Size Report 2034, IMARC Group, 2025**

India welding equipment market valued at USD 710.74 million in 2025, projected at USD 1,091.66 million by 2034 at 4.71% CAGR; key drivers include Bharatmala highways, metro rail, defence, and EV manufacturing.

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Notes India's vocational programs produced approximately 250,000 certified welders by 2023, falling short of rising demand across construction and automotive manufacturing.

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14 **Most In-Demand Blue Collar Jobs Abroad in 2025 for Indians, JSI Overseas Manpower, 2025**

Documents Gulf demand for Indian welders including ARC, 6G TIG, and fabricator positions; salary range AED 1,800-3,500 in oil and gas, shipyards, and heavy engineering sectors in Qatar and Saudi Arabia.

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15 **Welder Salary in India, Indeed India, 2026**

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https://in.indeed.com/career/welder/salaries · 2026 · accessed Jun 2026

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India welder salary ranges from Rs 2L-6L (entry) to Rs 30L-50L (welding supervisor) and Rs 45L-80L (welding engineer); documents full career ladder pay progression.

https://www.cvowl.com/salary-career-path/welder · 2026 · accessed Jun 2026

17 **Advanced Diploma in Welding Technology NSQF Level 6, DGT, Ministry of Skill Development and Entrepreneurship, 2024**

DGT curriculum document for the Advanced Diploma in Welding Technology, NSQF Level 6, under the Capital Goods and Manufacturing sector; targeted at welding engineering and supervisory roles.

https://dgt.gov.in/sites/default/files/2024-01/Adv.%20Dip(V)_Welding%20Tech._NSQF-6.pdf · 2024 · accessed Jun 2026

18 **Marksheet and Certificate Changes CTS 2025 Admission Year Onwards, DGT, 2026**

DGT notification specifying revised e-NTC and e-Marksheet format from 2025 admission year, including digital verification, OJT grades, and updated certification format.

https://dgt.gov.in/sites/default/files/2026-04/Marksheet-and-Certificate-Changes_CTS_2025-admission-year-onwards_0.pdf · 2026 · accessed Jun 2026